LABOUR F[illegible]E ADAPTABILITY:
IMPLICATIONS FOR EDUCATION AND TRAINING

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LABOUR FORCE ADAPTABILITY: IMPLICATIONS FOR EDUCATION AND TRAINING

Labour force adaptability has become the key labour market issue of the 1980's and 1990's. A flexible and adaptable labour force is crucial to meet both downside adjustment problems (e.g., plant closings, mass layoffs, permanent job loss) as well as upside adjustment problems (e.g., skill shortages, retraining).

The pressure for change has emanated from a variety of interrelated sources. On the demand side of the labour market, the pressures for change include global competition, free trade, deregulation, privatization and severe and prolonged recessions. On the supply side of the labour market, pressures for change have emanated from the aging workforce, the increased participation and integration of women into the workforce, the dominance of the two-earner family, and the growing ethnic diversity of the workforce.

Much of the pressure for flexibility and adaptability in the labour force is derived from the increased pressure on employers for flexibility and adaptability in their business operations. Employers have been undertaking dramatic restructuring and deindustrialization, as the heavy manufacturing, assembly-line, "smokestack" industries have often been replaced by more flexible, modular factories linked by advanced communications and just-in-time delivery. The information economy is replacing the industrial economy. Increased use is made of subcontracting, privatization

and the use of contingent workforces such as temporary help agencies, permanent part-time workers, and workers on temporary contracts. Large organizations increasingly form alliances and joint ventures, often with smaller more flexible units that serve as "buffers" for demand fluctuations. Within large units, separate profit centres are often created, with each unit having to be profitable to survive. Mergers and acquisitions are an integral part of the industrial restructuring.

Given the high labour costs of most Canadian producers (especially relative to the Newly Industrialized Countries and increasingly relative to the deregulated and deunionized U.S. workforce), Canadian employers have sought ways of remaining competitive in an increasingly competitive environment. Components of that competitive strategy often include high value-added production, development of "market niches" often of specialized customized products, emphasis on quality and complete customer service, and the development of a world-product mandate for certain product lines.

Governments have often encouraged such strategic responses for competitiveness in part because they redirect emphasis away from simply cutting labour cost through employment reductions and wage restraint -- the responses that conflict with labours agenda and that create political problems. Rather governments emphasise

productivity, quality and the development of a skilled workforce that can be in the mutual interest of both labour and management.

The dramatic adjustments facing employers and their strategic responses to those changes are reshaping the workplace and its associated workplace practices. Human resource strategy is becoming an integral part of the broader business strategy of employers and industrial strategy of governments. The emphasis on labour force flexibility and adaptability is part of those strategies.

The purpose of this paper is to discuss the implications of labour force flexibility and adaptability for education and training. The paper begins with a discussion of the changing workplace practices that are occurring as a result of the previously discussed pressures for change and the strategic response of business to those changes. The main features of the Canadian education and training system are then outlined, emphasising those features that relate to the flexibility and adaptability of the workforce in the face of the changing workplace practices. The paper concludes with a discussion of the implications for education and training that result from the changing economic environment and associated workplace practices.

CHANGING WORKPLACE PRACTICES AND IMPLICATIONS FOR EDUCATION AND TRAINING

As indicated, the rapidly changing business environment, and employers' strategic responses to those changes, have led to a variety of interrelated modifications -- indeed innovations-- in the workplace. In this section, those main innovations are outlined, indicating why they arose, and their implications for education and training.

Job Redesign and Broader Job Classifications

Dramatic changes have been occurring in the design of jobs in terms of their content, their relationship to each other and the relationship between employees and their job. The main elements of job redesign have included job enlargement, job enrichment and job rotation. Job enlargement refers to the horizontal expansion of the job to encompass more tasks of a similar level of complexity so as to involve more variety rather than the repetition of the same task. Job enrichment involves the vertical expansion of the job to encompass more tasks, often of different levels of complexity. The range of tasks often include interacting with "downstream" producers who provide the related inputs, co-workers who interact at the same stage of the production process, and "upstream" clients and customers who buy the product.

Reflecting this trend towards job enrichment and enlargement has been a decrease in the number of job classifications either as part of the collective agreement or as part of the company personnel policy. This usually entails a combination of a wider variety of tasks of the same level of complexity (job enlargement) as well as more tasks of a different level of complexity (job enrichment). In either case, the "old" jurisdictional boundaries that defined the tasks of each specific worker are often broken down. This enables greater flexibility in the use of the workforce, especially to meet rapid demand changes and the requirements of just-in-time delivery.

Job rotation is also often part of job enlargement and enrichment. That is, in order to familiarize workers with the wider variety of tasks (both horizontally and vertically), workers are often rotated through a variety of tasks. This also has the benefit of giving employees an appreciation of the work done by others, and it provides employees with knowledge of the broader production process. For employers, job rotation also means that more employees are available to fill-in for absenteeism or leaves or unanticipated demands associated with production problems.

The changes towards job enlargement and enrichment are part-and-parcel of the trend away from rigid, assembly-line processes which involved repetitive specialization in a narrow set of tasks. It is also part of the emphasis on quality control being the

responsibility of individual workers rather than having quality problems simply passed on to the next stage in the production process, to be picked up by a separate quality control department. Greater responsibility, however, requires that employees be given more latitude and control over a broader range of steps in the production process. The changes towards job enlargement and enrichment are also part of the attempt to enhance employee motivation and commitment and to reduce the alienation associated with assembly-line processes.

Whatever the reasons for their being utilized, the increasing use of such practices as job enlargement, job enrichment, job rotation, and broader job classifications, has a number of important implications for education and training. It is no longer satisfactory to train for a single narrowly-defined skill, the mastery of which will be honed by repetitive usage over time. Rather, the emphasis is on how to learn to do new and different tasks; that is, the emphasis is on "learning how to learn", more than learning how to do a specific task.

The broader array of tasks that must be done also implies an increased emphasis on interaction and co-ordination with others. This can occur as employees are increasingly required to interact with "upstream" suppliers, "downstream" customers, and co-workers at various stages in the production process. This in turn implies

an emphasis on "people" skills and communication, as well as production skills

The broader responsibility that often accompanies these changes, and the associated reduction in supervision, places greater emphasis on the need for employees to work with a minimum of supervision and direct orders. Skills such as goal-setting, time-management, self-pacing, and decision-making with respect to production trade-offs will be at a premium.

The emphasis on a multiplicity of tasks, often of various levels of complexity, implies a need for multiskilling in the training area -- the ability to do a variety of tasks, and ones that may rapidly change over time. This in turn puts a premium on a generic base of education and general training and skills that can provide the foundation upon which to build -- and constantly rebuild. Retraining and lifelong learning will be more important (as it already is given the job destruction and job creation that is going on with industrial restructuring). The increased number of tasks associated with job enlargement and enrichment simply adds another layer of change (i.e., <u>within</u> jobs), on top of the requirement to more frequently change jobs. That is, employees are increasingly required not only to change jobs, but to do a wider array of task within each of these changes. The need for adaptability and flexibility is obvious.

This premium on adaptability and flexibility is required not only for workers to enhance productivity on existing jobs, but also for them to obtain new jobs or alternative employment. Increasingly, the job requirement will be the ability to be flexible and adapt to a wide array of tasks, rather than to do a particular task.

To a certain extent, the processes of job rotation, enrichment and enlargement contain built-in elements of training that facilitate the requisite training occurring on-the-job, as part of the job redesign process itself. Job rotation, in effect, can be viewed as a process of learning different jobs, if accompanied by the requisite orientation and training. Job enlargement and job enrichment have the virtue that the new tasks can occur through marginal or incremental adjustments, that facilitate the employee absorbing the new tasks, perhaps in a self-paced manner, while productively carrying on with their usual tasks.

Employee Participation, Team Production and Quality Circles

Interrelated with the changes in job design, have been changes towards more employee participation in the decision making of the company. At the shop floor, this often occurs through quality circles of small groups of employees from a common work area who meet to discuss production issues, often with an emphasis on quality control. The quality circles are often associated with

team production whereby semi-autonomous workgroups at a particular workstation are responsible for all aspects of the job, in contrast to the assembly-line procedure where each individual worker is responsible for only one aspect of the job. The quality circles are also associated with the growing emphasis on workplace democracy, often under the general rubric of Quality of Worklife or QWL. Often these changes are associated with more information-sharing, both between employees and management and between various teams.

These various interrelated changes -- team production, quality circles, workplace democracy, QWL and information sharing -- have occurred for a variety of reasons, not the least of which is their apparent success in Japan. They are part of the emphasis on encouraging employees to be responsible for quality problems at their source, rather than simply being passed down to another level to be detected and dealt with by separate quality control departments. They are often attempts on the part of management to get suggestions and ideas from those persons who have the most knowledge of production issues -- employees at the particular jobsite. Even if that knowledge turns out to be of minimal use, involving workers in part of the decision making process can enhance commitment and identification with the goals of the organization. Identification with a workplace team may also foster identification with the organization as a team, and this in turn

fosters the co-operative rather than adversarial relationship that many organizations are trying to foster at the workplace.

In many cases, it is also likely that these practices, which emphasise direct communication between employees and management, can be used to bypass unions where they are present, or to reduce the likelihood of employees wanting to form a union. It is for such reasons that unions often oppose such initiatives, or at least are reluctant to endorse them. Union co-operation with such initiatives, however, is often regarded as an important ingredient of their success when they are introduced into unionized environments.

Whatever the rationale for their existence, these workplace practices involving employee participation, quality circles and team production have implications for education and training. As with the job enlargement and enrichment policies, they imply a greater need for multiskilling -- the ability to do a wide range of tasks. This in turn puts a premium on education and training that is broad-based and general in the sense that it can be useful in a wider array of situations, and provides the foundation upon which to constantly build and rebuild.

Also, if the workplace is to be more democratic, there is need for the basic levels of education that are required for the functioning of democracy. As well, there is more of a premium on

decision making skills and on interpersonal interactions or "people skills" as well as production skills. Middle-management, in these circumstances, will have to be trained to act more as facilitators than supervisors, and to elicit and articulate the ideas of the workgroups and teams.

To a certain extent, firms that introduce such practices as quality circles and team production will likely build-in a training component to each of these new practices. Educational institutions also could give training in such practices by structuring courses more in the same fashion as the workplace model -- instructors acting more as "facilitators" than supervisors, more student participation in the learning process, and group or team projects with an emphasis on interpersonal interactions. This would help train people for a work environment that involved a more participatory team oriented approach.

Contingent Compensation, Pay-for-Performance

In the compensation area, there has been increased emphasis on compensation schemes that are contingent upon the performance or productivity of the employee. These may be based upon a measure of the performance of the workgroup or company. If based on the performance of the company, they are often termed gainsharing plans. They may also be based on the performance of the individual employee, often through merit pay, piece-rates, or for good records

of absenteeism. The group or company performance plans can encourage co-operative, team efforts, albeit the incentive for individual performance diminishes as the group size grows. The individual merit schemes can enhance individual incentives, but at the possible expense of encouraging group co-operation.

Such contingent or flexible compensation schemes have increased for a variety of reasons. Tying pay to performance is part of the thrust to enhance productivity -- a key ingredient to competitiveness given rising labour cost, the productivity slowdown, and the appreciating Canadian dollar. It is also part of the emphasis on more flexible compensation, geared to the different market realities and ability to pay of different companies, industries and regions. This is often regarded as essential to the survival of some companies and even industries, and it is part of the larger trend towards a breakdown of some historical pattern bargaining relationships. Wage flexibility has also been fostered to avoid layoffs, with the quid pro quo to be bonuses or "catch-up" in the expansionary periods. Contingent compensation is often an integral component of the employee participation schemes associated with team production and quality circles, since there is a general perception that these are more successful when introduced as a "package", tied to well-defined rewards. These practices, including group productivity and bonus schemes, are also being emulated because of their apparent success in Japan -- a country

that has managed to remain competitive in spite of rapidly rising labour costs.

The trend towards more flexible, contingent compensation schemes has implications for education and training, albeit they are not likely to be as important as the implications that flow from the innovations in job redesign and employee participation and team production. More flexible compensation likely will lead to higher returns to investments in education and training, at least to the extent that they improve productivity and performance. This in turn should increase the individual incentive to invest in training and education. More flexible compensation schemes will also put a premium on education and training that is sufficiently broad and general to reduce the likelihood that workers will be adversely affected by market fluctuations. That is, flexible compensation by definition will subject worker compensation more to the vicissitudes of market forces, thereby putting a premium on training that will protect them from such fluctuations. Lastly, if flexible compensation reduces layoffs during downturns, then the workers will have more of an opportunity to take on-the-job training during such slack periods. That is, the labour retention or labour "hoarding" that will increase in downturns can be trained on-the-job during those slack periods.

Adjusting to an Aging Workforce

Human resource practices are also facing the challenge of adjusting to an aging workforce. This is expected to lead to labour shortages, as the tail-end of the "baby-boom" population leaves the youth age groups. It is also leading to adjustment problems as the leading edge of the baby-boom enters middle-age, creating problems of "clogged" promotion opportunities, skill obsolescence. The problems are particularly acute when this age group is subject to permanent job loss or displacement, as is increasingly the case with plant closings and industrial structuring, especially from blue-collar manufacturing to service jobs. In the near future, the leading edge of the baby boom will be approaching retirement age, and employers will face the human resource implications of that trend.

Employers have responded to these adjustment problems in a variety of ways, many of which have important implications for education and training. Given the impending shortages of youths for entry-level positions, employers are examining the recruiting options amongst other groups such as retires and immigrants. To deal with the clogged promotion opportunities, lateral transfers are becoming more common, as are reduced job responsibilities. For the upcoming retirement issues, employers are experimenting more with early and flexible retirement options, often structured through features of employer-sponsored occupational pension plans.

Employers are also preparing to adjust to the possibility of a legislative ban on mandatory retirement.

These adjustment issues have implications for education and training programs. Shortages amongst entry level positions conventionally filled by youths should lead to substantial drops in youth unemployment, which in turn means that the labour market may serve as more of a "pull factor" inducing youths to leave school for the growing job opportunities of the labour market. The lateral transfers and the skill obsolescence of the aging workforce, means an increased emphasis on adult retraining, recurring education, and refresher courses and training modules. In many cases, there may even be a need for "downtraining" -- training for lower level jobs and for adapting to that change. The increased use of lateral transfers and downtraining also means that older workers increasingly will be supervised by younger workers, and this implies a need for sensitivity training for that possibility.

The greater number of older workers and the trend towards earlier retirement ages also means that there will be a shorter "payback" period over which to recoup the costs of retraining the growing number of older workers. This applies to employers who may pay for company-specific training that is usable mainly in the sponsoring company, and it applies to employees who may pay for general training that is usable in a variety of companies. This

may be exacerbated by the tendency, in the general workforce, towards greater turnover if the training skills are lost through turnover, albeit this also puts a premium on general training that is usable in a variety of work environments. Whether the shorter payback period reduces the overall demand for training, it should encourage a restructuring towards shorter and more recurring training modules.

For older workers the benefits of training may be lower because of their shorter payback period. As well, the costs may be higher because of their generally higher forgone income or opportunity cost of time. The psychic costs may be greater for older workers, given the longer time period they have been out of school. These facts may account for the substantial reduction in training that occurs with age, approaching very low levels for workers over the age of 40 (Picot, 1987). As more workers enter those age brackets where they take less training, the overall demand for training will decrease. Whether this will be offset by greater benefits of training to offset the adjustment consequences or lower forgone income because of job losses, remains an unanswered question.

The aging workforce also implies a need for a reallocation of training resources from the training of youths (the problem of the 1970's) and towards retraining and recurring education of adults (the problem of the 1990's and beyond). In the design and delivery

of training and adult education it also implies a need for attention to any special problems associated with the training of older workers. The literature on training older workers, for example, suggests that older workers can certainly absorb retraining[1], and a number of successful training initiatives in that area have been reported[2]. The literature also suggests that the training will be more successful if it involves self-paced, individualized, non verbal instruction, perhaps from programmed handbooks, rather than the conventional verbal, group instruction with testing procedures. The training, and those doing the training, should also be sensitive to the concerns of older workers, especially with respect to such factors as confidence and self-esteem[3].

Adjusting to Permanent Layoffs

In addition to adjusting to an aging workforce, human resource and workplace practices are increasingly having to cope with structural adjustments that are likely to be permanent and not temporary. These result from such factors as plant closings, permanent downsizing and layoffs, and permanent displacements to alternative jobs often in quite different industries.

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[1]Copperman and Keast (1983, p.183), Deoring Rhodes and Schuster(1983,p.112), Robinson, Coberly and Paul (1985, p.518).

[2]Kunze (1982), Rosen and Jerdee (1985) and Ward (1988).

[3]See Belbin and Belbin (1972), Bourne (1982), Coberly (1982), and Sterns and Doverspike (1988).

The layoffs and substantial turnover that characterizes the North American labour market can discourage both firms and employees from investing in training, for fear of being unable to recoup the investment costs. That is, many of our adjustments occur in the external labour market through layoffs, unemployment and mobility, and they often involve changing employers. While this may give the appearance of flexibility and adaptability, it can discourage the parties from investing in training, both because of the potential loss of trainees to other employers, and because redundant workers are quickly laid off into the external labour market. This is in contrast to Japan, for example, where many of the adjustments occur in the internal labour market of the firm, given their system of lifetime employment for a core of workers in the large firms. Redundant employees are often trained and reallocated within the organization. Employers have an incentive to do so because the employee will remain with the firm and will not likely be laid off. It is for this reason that Japanese employers provide approximately 20 times the training provided a typical North American worker[4], and this training has enabled Japan to continue to adapt in spite of their rapidly rising labour costs.

The permanent layoffs and displacements that have increasingly characterized the North American labour market, often involve new challenges -- but also opportunities -- in the training area. The challenges exist because mass layoffs often occur especially in the

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[4]Kopelman (1986, p. 109).

case of plant closings, and these layoffs often saturate the local labour market, especially in smaller communities. As well, the workers are often older, from well-paid blue-collar jobs, and their skills are usually specific to the particular declining industry where they have been employed for a considerable length of time. With an increasingly bimodal workforce of "good jobs and bad jobs" they may not have the skill for the good jobs, and yet they have the aspirations that make them understandably reluctant to take on the less skilled jobs, often in the lower paying service sector. The training requirements of a large group of permanently displaced older workers are fundamentally different from those associated with providing basic skills to new entrants or upgrading an existing workforce.

While there are these challenges, there are also some opportunities that result from these situations, and these opportunities have implications for training. The fact that these adjustments are often occurring in particular industries that are downsizing, means that retraining solutions can be crafted to the particular needs of that industry. As well, there may be institutional structures (unions, employer associations, joint-committees) already in place that can provide the detailed knowledge of the industry. Such structures may be a vehicle for the design and delivery of retraining. The fact that the workers often face common problem, and they may be homogeneous in their

skills and needs, means that a comprehensive adjustment "package" may be desirable, with training being an integrated component.

Such structures already exist, and many are involved with the training process. For example, the Canadian Steel Trade and Employment Congress (CSTEC) is a joint labour-management committee funded under the Innovations component of the Canadian Jobs Strategy program to deal with labour adjustment issues in the steel industry. Local plant committees often design their own labour adjustment package, usually with a training component, and often involving "training spaces" purchased from local educational institutions at a reduced rate.

Employment and Immigration Canada finances approximately 30 joint labour-management committees through its Industrial Adjustment Service (IAS). These are designed to deal with adjustment issues and to provide information on how to access the array of government programs that are available, including those in the training area. Some like the Canadian Automotive Repair and Service Council (CARS), focus their efforts on the training problems that are associated with such factors as the decline of apprenticeships, the problems of nonuniform training standards across the country, and the training needs of the growing number of part suppliers that are taking over functions once done by the auto manufacturers themselves. Others, like the Joint Human Resources Committee of the Electrical/ Electronics Industry focus their

efforts on the establishment and administration of a training fund, financed jointly by labour, management and government. The employers' share comes from a levy of 1% of payroll. Joint labour-management training committees at the firm can apply for funds, which will be allocated on the basis of 40% for skill upgrading, 20% for general education, 10% for employee directed training, and 20% for plant closings.

Joint labour-management committees also exist at the regional level, and they often deal with labour adjustment issues, including those that involve education and training. For example, Manitoba is setting up a permanent Skills Training Advisory Committee, with representatives from business and labour, to deal with human resource issues, especially training. Labour and management representatives also sit on the Voluntary Planning Advisory Board of Nova Scotia, and the Decision Maker's Committee of New Brunswick, both of which advice the premier on training issues. In Ontario, labour and management representatives are involved in various joint efforts in partnership with the government: the Ontario Training Corporation; the sectoral and regional training committees of the proposed Ontario Training Board; the Vision 2000 project on the future of Ontario Community Colleges; and the Ontario Premier's Council which tries to establish a consensus for developing a competitive strategy for the province, including a human resource component that is consistent with that strategy.

At the local level, training or labour supply committees (with representatives from labour, management, and educational institutions), are often fostered as part of the federal Canadian Jobs Strategy program. They do a variety of functions: identify and prioritize local training and labour market needs; determine the best means of providing the training; facilitate the accessing of CJS funds by the private sector; and administer the delivery of the training programs. The number and names of such committees vary by province: 57 Community Industrial Training Committees in Ontario; 11 similar committees in Quebec; 8 Regional Industrial Training Committees in Nova Scotia; 2 in Saskatchewan, 1 in Manitoba and none in Alberta or British Columbia.

Adjustments to Equity Issues

In addition to the adjustments from permanent layoffs and from an aging workforce, employers will be increasingly altering their workplace and human resource practices in response to a number of equity issues, often associated with an increasingly heterogenous and diverse workforce. In some cases, the pressures have emanated from the different requirements of a diverse workforce made up increasingly of visible minorities, women, two-earner families, single-parent families, and older workers. In other cases, the changes have been spurred on by legislative initiatives such as pay equity, employment equity, health and safety legislation, and reasonable accommodation requirements.

Pay equity legislation (equal pay for work of equal value), for example, exists in all jurisdictions except the three Western provinces. British Columbia has recently committed itself to the policy for the public sector. The policy requires job evaluation procedures to determine the "value" of jobs, with the pay in female-dominated jobs to be raised to the pay of male-dominated job of the same value.

Employment equity (affirmative action) exists legislatively only in the federal jurisdiction and for federal contractors. The later has a substantial scope, however, since many organizations do business with the federal government, and hence are subject to contract compliance. The procedure essentially requires the firm to do an internal audit of its workforce composition with respect to the four designated groups -- women, visible minorities, aboriginal people, and disabled persons. These proportions are then compared to the numbers externally available in the relevant labour market, usually based on census data. Goals and a timetable for achieving the goals are then established to close any gap between the internal numbers and the externally available pool.

Health and safety regulations have also increased substantially, especially in the area of providing information on workplace hazards. In the workers' compensation area, increased emphasis has also been placed on vocational rehabilitation to

facilitate the return to work of otherwise disabled workers. This has also been facilitated by an increased onus on the part of employers to reasonably accommodate the return to work of formerly injured workers.

Human rights legislation in general is increasingly emphasizing the duty of employers to reasonably accommodate the needs of disabled persons. This is part of the general employment equity requirements for disabled persons as a designated group, and it is part of the increased emphasis on vocational rehabilitation of injured workers. It is also part of the trend towards "deinstitutionilization" in general, and in moving disabled persons from "sheltered workshops" and into the workplace.

While these changes have dramatic implications for the workplace practices of employers in general, they also have implications for education and training. First, there is a need to educate and sensitize the workforce in general about these equity issues -- their rationale, procedures and implications. Equity for one group can raise hostilities in other groups, and education may defuse some of these hostilities. It is for this reason that the Canadian Auto Workers, in one of their recent agreements, negotiated a training fund to educate workers on the need and rationale for pay and employment equity policies at the workplace.

Second, training and education of workers and employers, especially small employers, may be necessary on many of the technical issues of these policies. The administrative and technical requirements are substantial in such areas as pay equity (job evaluation, estimating paylines, adjusting pay), employment equity (internal audits, external availability analyses), health and safety (basic regulations, labelling procedures), and reasonable accommodation (needs analyses and workplace analyses). One of the biggest concerns of employers in meeting these equity requirements is that the regulatory agencies provide little guidance on how to meet the complex technical requirements of the law.

Third, many of these equity requirements involve training as a possible mechanism for complying with the policy. For example, employment equity puts a premium on upgrading designated groups to be promoted to higher positions within the organization, or to facilitate their being recruited from the externally available pool of candidates who may not be completely qualified. Reasonably accommodating the return to work of a disabled worker may entail special training. Health and safety training and training to understand the information labels on hazardous substances are an integral component of health and safety regulations.

Fourth, the policies themselves may alter training incentives, albeit often in a complicated fashion. Pay equity, for example,

may reduce the incentive to undertake training to leave the female dominated jobs, and (like any wage fixing) it may make it more difficult to take lower wages in return for training.[5] In contrast, it may encourage employers to provide more training in those jobs receiving pay equity adjustments to upgrade them commensurate with their pay. Employment equity may encourage the designated groups to undertake more training if they feel that employment and promotion opportunities are not as blocked.

Fifth, many of these equity requirements give rise to special training needs geared to the particular groups. This is most obviously the case with respect to the vocational rehabilitation of disabled persons, since their needs may be vastly different from those of the usual workforce. It may also be the case with respect to aboriginal people. In some cases "outreach" components may be an integral part of the training.

Lastly, the labour market emphasis on employment equity highlights the possible need for education and training equity. The same principles that are required of employers to meet employment equity in the labour market may be relevant for institutions that provide our education and training services. The

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[5]Elizabeth Sawhill (1973, p.394), for example, stated: "Equal pay laws are not very helpful ... they tend to reduce training alternatives available to women, which is a major source of the sex differential. Much more emphasis need to be placed on opening up employment opportunities." It should be emphasised, however, that "allowable exemptions" can and are made for jobs that provide significant training.

pressure on employers to meet employment equity goals is being filtered back to the education institutions to provide qualified candidates, since educational institutions are regarded as the "pipeline" for such candidates. Increasingly, such institutions are also subject to scrutiny with respect to possible systemic discrimination that may be the unintended byproduct of normal personnel policies but that may have a disparate impact on particular groups. For example, training subsidies that are based on past labour market experience may have a disparate impact on women who may not accumulate such continuous experience. Clearly, the equity pressures that are affecting employers will both directly and indirectly put the same pressures on our educational and training institutions.

Summary of Changing Workplace/HRM Practices and Implications for Education and Training

Table 1 summarizes the changing workplace/HRM practices and adjustment needs and their implications for education and training. As the final entry indicates (as a summary of the summary), the changing workplace practices involve such factors as: job enlargement, enrichment and rotation with broader job classifications and reduced supervision; employee participation and team production; flexible compensation; and adjustments to an aging workforce, permanent job loses and equity issues.

TABLE 1 - - CHANGING WORKPLACE PRACTICES/HRM ISSUES AND IMPLICATIONS FOR EDUCATION AND TRAINING

Workplace/HRM Practice and Adjustment	Implications for Education and Training
1. Job enlargement, enrichment and rotation and broader job classifications; vertical command structure being replaced by horizontal structure with reduced supervision	- general, broad-based training in generic skills to facilitate multiskilling for a variety of tasks - emphasis on foundation upon which to build and constantly retrain for lifelong learning and subsequent training modules - emphasis on "learning how to learn" - emphasis on interpersonal "people skills" for interacting and communicating - emphasis on self-responsibility skills, goal setting and decision making
2. Employee participation, quality circles, semi-autonomous team production, workplace democracy, information sharing	- as above
3. Contingent compensation, pay-for-performance	- will increase private returns to education and training and hence individual incentives to invest - premium on general training to help diversify against risks - may lead to reduced layoffs and therefore greater opportunity for on-the-job training "underutilized" labour

Workplace/HRM Practice and Adjustment	Implications for Education and Training
4. Adjusting to aging workforce: labour shortages at entry positions; "clogged" promotion opport-unities; skill obsolescence; permanent job losses	- adult retraining, recurring education, "lifelong" learning - retraining for lateral transfers and possible "downtraining" - reduced youth unemployment means labour market may be "pull factor" inducing youths out of school - perhaps some reduced demand for training, given shorter payback period for older workers and increased labour turnover, as well as possibly higher psychic costs for older workers - reallocation of training resources from youths to older workers - need for attention to special problems associated with the training of older workers (e.g., self-paced, individualized, non-verbal)
5. Adjusting to permanent layoffs and displace-ments, often in specific industries	- challenges since mass layoffs saturate local community often with older well-paid workers with industry specific skills not usable in growing bi-modal service sector - opportunities since can craft a "group package" using the institutional structures and knowledge of that industry
6. Equity issues and changing ethnic composition of workforce (pay and employment equity, reasonable accommo-dation, health and safety)	- need to educate and sensitize workforce on the rationale and implications of the policies - training and education on technical aspects - training as a mechanism to facilitate compliance - may alter training incentives - special training needs, e.g., disabled - emphasis on equity in education and training institutions

Summary of Changes

- job enlargement, enrichment and rotation with broader job classifications and reduced supervision
- employee participation and team production
- flexible contingent compensation
- adjustments to aging workforce, permanent job loses and equity issues

Summary of Implications

- premium on general, broad-based training in generic skills as foundation for subsequent retraining and multiskilling
- emphasis on interpersonal "people skills" and self-responsibility
- reallocation from youth to adult training for lifelong learning, lateral transfers
- emphasis on special training needs of particular groups (older, permanent and mass layoffs, employment equity target groups)
- complex effect on incentives for private parties to undertake training

These changes, often involve similar implications for education and training. They place a greater premium on general, broad-based training in generic skills as a foundation for subsequent retraining and multiskilling. They also place a premium on "people skills" and training in self responsibility and group interactions. They imply a need for reallocating training efforts from youths to adult retraining for subsequent lifelong learning and possibly for lateral transfers. There will also be more emphasis on the special training needs of particular groups -- older workers, those affected by permanent and mass layoffs, and the employment equity target groups. The changing workplace practices will have a complex effect on the incentives for employers and employees to undertake training -- sometimes increasing that incentive, at other times reducing the incentive. What is certain is that changing workplace practices and adjustments give rise to <u>different</u> training and education needs than those that prevailed in the past.

CHARACTERISTICS OF CANADIAN EDUCATION AND TRAINING SYSTEM

While there is certainty that the workplace practices, human resource policies, and adjustment issues are changing, and these have implications for education and training, what is less certain is the extent to which the existing education and training system is meeting those requirements, or equipped to meet them. In this section, we outline the main characteristics of our education and

training system that have implications for meeting the challenges associated with the changing workplace/human resource practices and adjustment needs. The emphasis is on the extent to which the existing structure meets the existing and emerging needs, and, if not, the changes that are required of the existing education and training system.

At the outset, it should be emphasized that improvements in our education and training system have been emphasized by virtually every group that has looked at the competitive challenges we face and increasingly will face in the future.[6] It should also be emphasized, however, that while these reports documented shortcomings of the existing system, and they suggested general directions for improvement, they were less successful in providing detailed specifics on how best to attain those changes. The recommendations were often in very general terms -- more training

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[6]In Canada, this is the case with respect to the Canadian Labour Market and Productivity Centre (1989) report Focus on Adjustment, the Economic Council of Canada's Perspective 2000, the Grandpre (1989) report on Adjusting to Win, the Macdonald Commission (1985) report, the Ontario Council of Regents (1989) report Vision 2000 on the community colleges, the Ontario Premier's Council (1988) report, as well as the earlier Dodge report, Allmand report, the Economic Council's In Short Supply, and the CEIC Skill Development Leave Task Force report on Learning a Living in Canada (the later four reviewed in Davies 1986). In the United States, this is the case with respect to the American Assembly report from 65 leaders of business, labour, academia and government (Starr 1988), the American Association of Community Colleges and Junior Colleges (1990) report Productive America, the American Society for Training and Development (1988) report on Gaining the Competitive Edge, the Business-Higher Education Forum (1985) report, the Conference Board report (Lusterman 1985), the Cuomo Commission report (Kaden and Smith 1988), and the Hudson Institute report Workforce 2000 (Johnston and Packer 1987).

from employers, more support from governments, and more willingness to undertake vocational education and training on the part of employees. The issue still remains on how best to provide an incentive structure and institution mechanisms to best achieve these changes.

In outlining the characteristics of our existing education and training system, and its relationship to the changing workplace requirements for adaptability and flexibility, the following discussion will attempt to provide more detail on some of the specific issues of design and implementation of education and training that are most relevant to this debate.

Complex, Unstandardized and Not Well Understood

The Canadian education and training system is extremely complex. This in turn fosters myths and stereotypes as well as a lack of dialogue between educators and users, especially employers. The complexity arises because of a variety of factors. Education is a provincial responsibility and hence there are a variety of different education systems. Within each province, local school boards shape decisions, making it difficult for provinces to link education policy to labour market needs.[7] This diversity has also made it difficult to get comparative, standardized information at

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[7]Gaskell (1991, p.63).

the national level.[8] Standardizing testing is also uncommon, making it extremely difficult to make comparisons in performance over time or across different education systems.[9]

In the training area the situation is even more complex, with even less information. The Canadian training system has gone through constant change under different federal initiatives: the Technical and Vocational Training Act of 1960, the Adult Occupational Training Act of 1967, the National Training Act of 1982, and the Canadian Jobs Strategy (CJS) of 1985. The current CJS structure involves a bewildering array of programs, such that it is difficult to see how employers or employees could be aware of the different options.[10] With respect to provincial and employer-sponsored industry training, it is extremely difficult to get

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[8]In commenting on the importance of the education and training sector, the Macdonald Commission (1985, p.735) stated: "Given the importance of this sector to Canada's future, relevant data and analyses are very scarce. Beyond figures that record expenditures and enrolments, little information about programs or students is available at the national level. Curricula vary from province to province, and small attempt has been made to define interprovincial differences or to relate the efficacy of the programs to varying circumstances."

[9]As stated in the Macdonald Commission report (1985, p.740): "studies which trace student performance over time and in different teaching situations are readily available in the United States and virtually non-existent in Canada."

[10]The Ontario Manpower Commission (1986, p.3) survey, for example, found that the vast majority of establishments that were undertaking training "were not aware of the major training-assistance programs of the federal and Ontario governments".

precise numbers of the magnitudes involved.[11] There have been a substantial number of ad hoc training surveys done in recent years; however, differences in definitions, concepts, and sample frames make comparisons and generalizations difficult.[12]

Jurisdictional Problems and Factionalism Amongst Stakeholders

While education is under provincial jurisdiction, training is under both federal and provincial jurisdictions, because the federal government has responsibility for the overall state of the economy. As indicated, this has made it difficult to compile systematic comparative information on education and training. More seriously, jurisdictional issues can impede the effective delivery of education and training[13].

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[11]As indicated by Meltz (1990, p.300) "On the basis of information available it is difficult to determine the precise amount of provincial spending on training. At the present time it appears that the federal government is still the major provider of funding for training in Canada." Meltz also indicates that while federal training likely exceeds provincial training, their combined amount also exceeds employer-sponsored industry training by a magnitude of five. This occurs, however, because government sponsored training is much longer (26 weeks) than industry training (3.5 weeks), and this offsets the fact that more employees are involved in industry training than government training.

[12]The Economic Council of Canada (1991) cited some 14 training surveys done mostly in the 1980's.

[13]As stated by Gaskell (1991, p. 61) "Any number of substantive educational issues have turned into debates about federal and provincial jurisdiction, instead of about educational policy".

For example, local control of education limits the ability of provincial governments to link the education system to labour market needs.[14] Provincial licensing requirements have impeded the acquisition of transferrable skills and deterred interprovincial mobility. Most seriously, divided responsibility often leads to no responsibility, as the parties use each other as scapegoats for inaction. There is a growing perception that the countries that will do best under growing globalization are the more "unitary" states that provide a stable and unified investment climate with national policies that can "deliver". In that vein, Canada, with its factionalism, will have problems, and this is born out in the areas of education and training.

Factionalism also appears to exist amongst the major stakeholders in the education and training area. Employers and the general public often perceive the education system as lacking in content and not preparing students for practical skills needed in the working world. Educators often perceive employers as being short sighted, and failing to understand that education involves motivating people in the process of learning, so as to provide the stimulus for constant self-learning. While employers and the general public often view students as lacking in motivation and in

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[14]Gaskell (1991, p.63) states: "The political structure clearly limits the ability of the state to intervene and bring educational requirements into line with economic, or even labour market, needs, much as this is urged and discussed. Even when provinces do bring in new policies, translating this policy into changed practices in the classroom is far from a simple matter. Often policy change remains at the level of rhetoric. This limits the ability of Canadian governments to use the education system as a tool of economic policy."

knowledge of the importance of education and training, a surprisingly large number -- even of dropouts -- have a pragmatic view of the importance of credentials for labour market success.[15] While unions often accuse employers of unnecessarily laying off workers rather than retraining them, employers accuse unions of deterring training by having rigid requirements with respect to ratios of apprentices to journeymen and by not allowing wage flexibility in return for training. Just as global competitive pressures make co-operative strategies increasingly necessary for joint survival in the labour relations area, so will such pressures put a premium on co-operation as opposed to factionalism in the education and training areas.

Generic Characteristics of Education System

There is remarkably little systematic information on the characteristics of the Canadian education system as it relates to the changing labour market needs, especially the new pressures for flexibility and adaptability. In terms of enrolment rates and expenditures, Canada is a world leader, and yet there are

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[15]As stated by Tanner (1991): "many respondents, male and female, from middle-class and working-class backgrounds, have retained a lingering commitment to an educational system that they have dropped out of... these reluctant rebels may not like school, but they do recognize its importance as a means of escaping dead-end jobs and improving their life chances...many of them leave school despite their commitment to education, pragmatically defined, not because they saw it as worthless." Gaskell (1991) also documents the extent to which students positively perceive the value of education and training in terms of its practical labour market importance.

disturbing aspects: significant amounts of illiteracy; high-school drop out rates of around 30%; and mediocre scores in international test in maths and sciences (Economic Council of Canada, 1991, p. 123). There is no streaming at the elementary level. At the secondary level, there has been an evolution from academic and vocational streaming in the 1960's, to a "cafeteria" approach of the 1970's, to somewhat of a reversion "back to basics" in the 1980's (e.g., Radwinsky 1987). The extent of streaming is actually difficult to establish because it occurs in more subtle forms such as selections of schools, programs and courses. There is a general lack of vocational education in part because of the stigma associated with such programs. There is little of an "international" nature associated with most curriculum, and at the higher levels there is little emphasis on the transition or diffusion of basic research knowledge to commercial application -- an area that has helped make the Japanese so competitive.

The Community College system provides one of the few intensive links between education and the more practical needs of employers. It is being adversely affected, however, by a number of recent trends. In particular, government supported training has shifted its emphasis from institutional training to on-the-job training, and from public training to "privatization" through support to employer based training. As well, the decline in the college age population means a drop in enrolment (Ontario Council of Regents, 1989). Extremely rapid technological change also means that it is

increasingly difficult and costly to provide training on the latest equipment -- equipment that can be obsolete before a student graduates.

While there are these problems, the colleges are an existing institutional structure that can provide a potentially viable link between education and changing labour market needs. They have an infrastructure that otherwise may be underutilized in the future, for reasons outlined. They can provide a "one-stop" delivery system, that is important given the bewildering array of programs that exist. They can "outreach" to the community through college-sponsored worksite training, telecommunication education, and computer aided instruction, all of which are growing in importance (Wittstruck and Daniel, 1989). The colleges can also provide the basic training in numeracy, literacy, problem solving, and computer skills, all of which form the basics upon which to build subsequent employer based training that is increasingly emphasising practical work-unit interventions, short workshops tied to actual practice and skill building for specific needs (Lusterman, 1985). Lastly, the colleges can provide the practical link between the basic research that tends to be conducted at universities and the diffusion and dissemination of that information into commercial applications -- a gap that has been identified as an impediment to our international competitiveness.

Generic Characteristics of our Training System

As discussed, a lack of data and information on what is an incredibly complex training system precludes a comprehensive analyses of how its characteristics relate to the rapidly changing needs of the workplace with its new workplace practices, human resource policies, and adjustment needs. Nevertheless, some generalizations are possible.

The current training structure that exists under the CJS subprograms tends to be targeted towards specific groups that experience adjustment problems: Job Development for the long term unemployed; Job Entry for youths and women entering or reentering the labour market; Skill Shortages for employers experiencing skill shortages; Skill Investment for workers affected by technological or market change; Community Futures for communities with chronic high unemployment; and Innovations for innovative solutions to labour market problems. This suggests a strong equity rather than skill development component, albeit it is not obvious that the recipients are the more disadvantaged in society. In essence, the publicly supported training seems to be geared to meeting the special needs of particular groups that otherwise may fall through the safety net, rather than trying to enhance the basic skills of the broader workforce.

Real expenditures on CJS have declined over time, especially for the long-term unemployed. There has been a reallocation from direct purchases of institutional training through "training seats" at community colleges towards direct spending to third parties and private employers (Economic Council of Canada, 1991). There has also been a reallocation from the training component to the combined work-experience/training area, with the job creation component increasing slightly but also being the most volatile (Meltz, 1990).

With respect to private training[16], it appears that about one-third of private firms provide formal training (up slightly from the 1960s and 1970s) and about two-thirds provide some form of training, either formal or informal. The proportion of employees receiving training is somewhat lower, with 7 to 19 percent indicating they received formal training, and 56 percent indicating that they received some form of training, either informal or formal in the previous two years. Large firms tend to be more likely to provide formal training, although they do not seem to provide more training per employees since their expenditure per worker at 268 dollars is only slightly above the average of 242 dollars. Training tends to be concentrated on well-paid workers in high-skilled jobs who already have high levels of human capital. Evidence on the extent to which the "poaching" problem is a

[16]Information in this and the next paragraph is from the Economic Council of Canada (1991) based on their analyses of the various surveys on training.

potential deterrent to firms undertaking training is inconclusive -- the proportion of firms reporting this a problem range from 1 percent to 58 percent! The variability in this range also highlights the extent to which caution should be used in comparing the results across different surveys.

On an international bases, Canada ranks lowest relative to the United Kingdom, Germany, Japan, the United States and France in terms of private sector spending on training and education as a proportion of GDP. It is also categorized as "weak" in terms of support for training in industry by employers and government. In terms of public expenditures on all labour market programs, Canada is above average, spending about 2.1 percent of its GDP. However, this is because it is highest in terms of income maintenance programs like unemployment insurance; in the areas of more "active" strategies like training and job creation it is at or near the bottom.

CONCLUDING OBSERVATIONS

In the first part of this paper, the key changes in our workplace practices, human resource management issues and adjustment needs were discussed. The implications of these changes for our education and training system were then derived. These changes and their implications were summarized in Table 1, with a

summary statement at the end of that table. In the next section, the characteristics of our education and training system were then documented, with particular emphasis on those characteristics that would be relevant to meeting the changing workplace needs. The key question is: do the characteristics of our education and training system meet the changing demands of the workplace? If not, what are the key gaps?

With respect to the need for more general broad-based training in generic skills as a foundation for subsequent retraining and multiskilling, the education system is generally structured to be able to deliver in this dimension. That is, there is little streaming into pure vocational training of a narrow specialized nature. The emphasis is more on basic skills and interpersonal "people" skills, albeit there will always be differences of opinion as to whether the "basics" are being sufficiently taught, especially in the maths and sciences. The main gaps in our education system, in terms of meeting changing employment needs, include: absence of standardization; difficulties in ensuring that local control takes sufficient account of broader labour market needs; weaknesses in maths, sciences, international perspectives and in diffusing basic research knowledge into commercial application; insufficient emphasis on education equity to match the growing emphasis on employment equity; and not fully utilizing the potential of the community college system as a key link between education and changing employment needs.

The training system seems less geared to meeting the changing need for a foundation of general, broad-based training in generic skills. In fact, the trend is away from institutional training and towards on-the-job training to meet specific employer needs, or the special equity needs of target groups of employees. What we do not know is whether such specific training is a viable way of teaching the more general skills upon which to build. That is, it is possible that learning a specific task in a particular work environment is the best way to learn how to do a broader array of ever changing tasks. It is also possible that specific on-the-job training is very limited, and in fact counterproductive if it is on a job that is artificially created through government support.

While the public training system as shaped by the CJS does not seem geared to meeting the broad based skill needs, it does seem designed to deal with the growing area of meeting the special needs of particular groups. Problem areas and needs in our public training system include: the need for "one-stop" shopping for both employers and employees to get information on this incredibly complex system; reallocation from youths to older workers given the demographic changes; reallocation from passive income maintenance programs that retard adjustments in the direction of market forces and towards more active training programs that encourage adjustment in the direction of market forces; and more co-operative efforts and well-defined responsibility from the major stakeholders.

With respect to private employer-sponsored training, the equity issues will get less emphasis because the increasing competitive pressures will focus limited resources on meeting the immediate skill needs. The equity issues will get some attention because of legislative pressure (employment equity, reasonable accommodation) and because of the differing needs of an increasingly diverse workforce. The "poaching problem" and increasing turnover will likely mitigate against private employers providing the foundation of more general broad-based training for subsequent retraining and multiskilling. In essence, it is unlikely that the private training system will do much more to meet the changing needs in this area than it has in the past. As indicated, these past efforts have been one of the lowest of comparable industrialized countries, averaging a little over one day of training per year per employee.

In times of limited resources, both public and private, it is unrealistic to expect large infusions of funds to deal with the changing education and training needs. From a policy perspective, this suggests a need to focus on the incentive structures of the different parties, both suppliers and demanders, in the education and training system. Rather than "throwing money" at the problem and arguing that there should simply be more education and training, the limited resource constraint suggests that we will have to focus more on ensuring that the private parties themselves are able to get the required education and training to meet the

rapidly changing needs. This in turn requires them to have better information -- a real obstacle given the complexities and lack of standardized information in this area.

The policy discussion in the education and training area tends to focus on ways to ensure that the education and training system adapt to the changing employment needs. This is an appropriate line of inquiry. However, it is also important to examine solutions that could involve reducing the pressures for such constant adaptation, especially when they involve severe adjustment consequences for employers and employees. More attention, for example, could be paid to whether it would be possible to encourage employers to adjust within their internal labour markets rather than through the external labour markets, which tend to involve wage losses and prolonged unemployment.

Limitations on public and private resources also suggests that effective change in the education and training area has to come more from reallocating resources within the system, and from encouraging more co-operative efforts from the stakeholders. If flexibility, adaptability and co-operation is increasingly required of employers and employees, it should also be forthcoming from the education and training system.

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